WATER SUPPLY OUTLOOK FOR WASHINGTON

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
APR. 1, 1977

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SNOW COURSE MEASUREMENTS BY A SURVEY TEAM IN UTAH'S WASATCH RANGE.
ORC-254-10

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, 6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia

WATER SUPPLY OUTLOOK FOR WASHINGTON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ADMINISTRATOR
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WASHINGTON, D C

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SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

WILBUR G. HALLAUER

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DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

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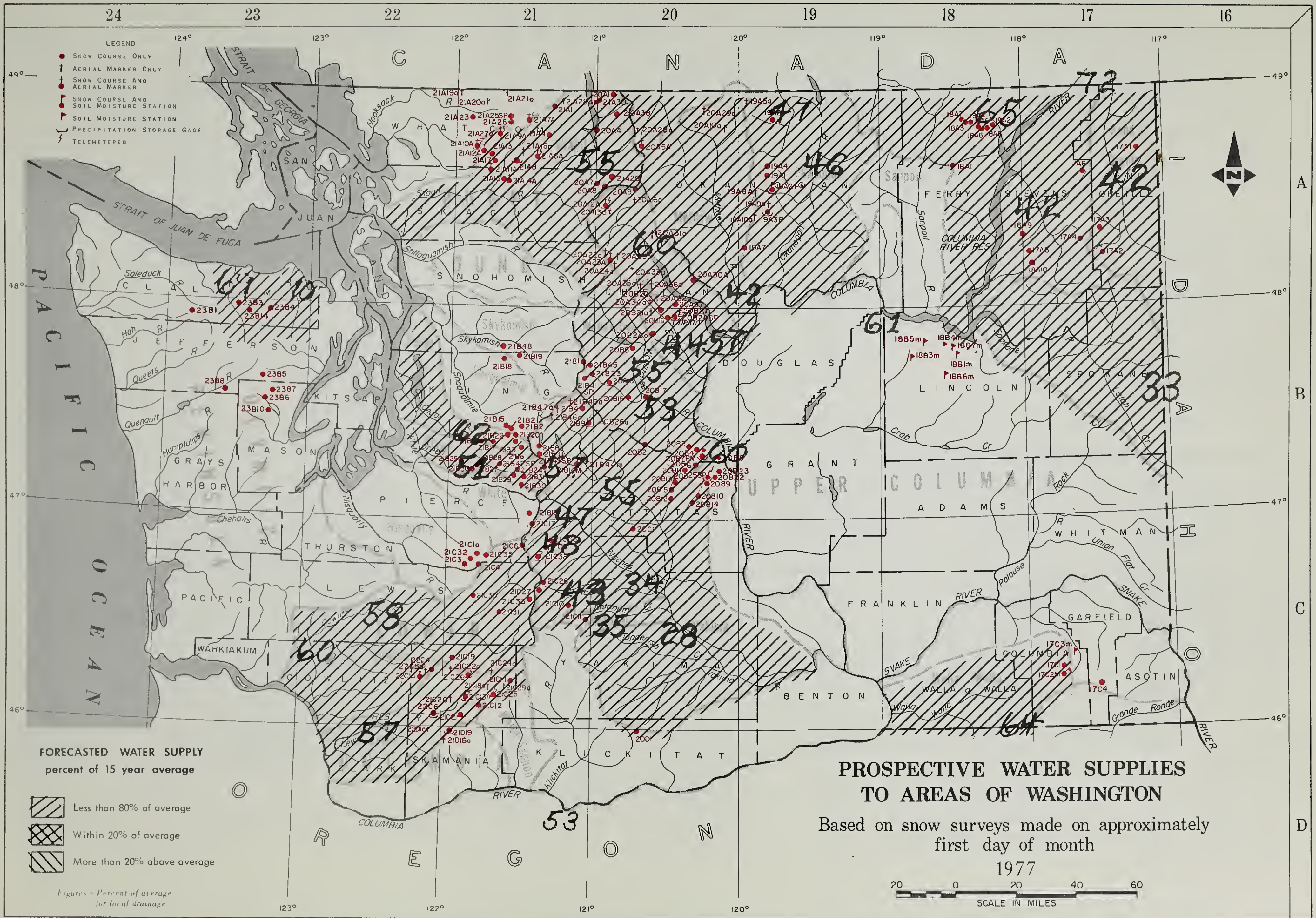
PROSPECTIVE WATER SUPPLIES
TO AREAS OF WASHINGTON
Based on snow surveys made on approximately first day of month
1977
SCALE IN MILES
LEGEND
Snow Course Only
Aerial Marker Only
Snow Course and Aerial Marker
Snow Course and Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
FORECASTED WATER SUPPLY
percent of 15 year average
Less than 80% of average
Within 20% of average
More than 20% above average
Figures = Percent of average for local drainage
CANADA
OREGON
IDAHO
PACIFIC OCEAN
STRAIT OF JUAN DE FUCA
STRAIT OF GEORGIA
WHATCOM
SKAGIT
SNOHOMISH
KING
PIERCE
THURSTON
LEWIS
COWLITZ
CLARK
SKAMANIA
KLICKITAT
YAKIMA
KITTITAS
CHELAN
OKANOGAN
FERRY
STEVENS
PEND OREILLE
SPOKANE
LINCOLN
DOUGLAS
GRANT
ADAMS
WHITMAN
FRANKLIN
BENTON
WALLA WALLA
COLUMBIA
GARFIELD
ASOTIN
CLALLAM
JEFFERSON
MASON
KITSAP
GRAYS HARBOR
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WAHKIAKUM
UPPER COLUMBIA
COLUMBIA RIVER RES.
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UPPER COLUMBIA DRAINAGE

Pend Oreille River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boyer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970

Kettle River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18AB	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600

Colville River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baird	17A6	19	36N	42E	3215
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Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370

Sanpoil River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Sherman Creek Pass	1BA1	19	36N	35E	5350

Okanogan River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	1B	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845

Methow River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	1BE	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650

Chelan Lake Basin

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	B	31N	16E	5275
Lyman Lake	20A23a	1B	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	1B	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500

Entiat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Creek G.S.	20B2Ba	19	28N	18E	5425
Brief	20B19	34	2BN	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	2BN	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	1BE	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	1BE	3540
Pugh Ridge	20A32a	34	30N	1BE	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	2BN	1BE	4900

Wenatchee River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Berne-Mill Creek	21B23	7	26N	1SE	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2	35	22N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1B10
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Stevens Pass Sand Shed	21B4S	12	26N	19E	3700

Wenatchee River (continued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Trough #2	20B25SP	10	20N	20E	5310

Colockum Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300

Squilchuck Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beehive Springs	20B3	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400

Stemilt Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Jump-Off	20BB	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400

Crab Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Creston-Kunz	1BB1m	32	27N	34E	2440
Jack Woods	1BB3m	2B	27N	31E	2750
Krause	1B84m	21	27N	33E	2420
Sheffels	18B5m	17	27N	32E	2378
Sherman	1BB7m	24	27N	33E	2440
Wheatridge	1BB6m	24	25N	32E	2290

Yakima River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	21B9	35	23N	14E	3200
Bumping Lake	21C8	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20810	17	19N	20E	4123
Domery Flat	21B44m	15	20N	14E	2200
Fish Lake	21B4	28	24N	14E	3371
Green Lake	21C10	3	12N	13E	6000
Grouse Camp	20811	29	21N	19E	5385
High Creek	20B12	34	20N	19E	2930
Joe Lake	21B46a	22	23N	12E	4624
Lake Cle Elum	21B14M	15	20N	14E	2200
Lemah Creek	21B47a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17	6	16N	11E	5400
Nanum	20813	4	20N	19E	3B75
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	21B8	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20815	22	20N	19E	3360
Waptus Lake	21B49a	12	23N	13E	3024
White Pass (East Side)	21C28	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Spruce Springs	17C4	9	8N	40E	5700

Mill Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400

Klickitat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Satus Pass	20D1	21	6N	17E	4030

White Salmon River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cultus Creek	21C12	35	7N	BE	4000

Lewis River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Lake	21C22a	19	9N	BE	4B00
Bob's Trail	21C21	25	BN	7E	2200
Calamity Ridge	22D1a	B	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200

Lewis River (continued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	2B	BN	9E	3500
Lone Pine Shelter	21C26	B	9N	7E	3B00
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	BN	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13A	14	7N	BE	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D1Ba	36	6N	6E	3000

Cowlitz River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ghost Forest	21C4	23	15N	BE	4550
Longmire	21C3	29	15N	BE	2760
Paradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	BE	5050

White River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Corral Pass	21B13	30	18N	11E	6000

Green River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Airstrip	21B24	1B	20N	11E	1B00
Charley Creek	21B25	27	21N	BE	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	BE	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	BE	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10	25	21N	11E	3B60
Twin Camp	21B30	1B	19N	11E	4100

Cedar River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21	33	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21815	B	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400

Snoqualmie River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900

Skykomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lake Elizabeth	21B19	33	26N	10E	2900

Skagit River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A2Ba	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows New	20A3B	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20AB	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2B00
Thunder Basin	21A30	10	35N	14E	4200

Baker River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	B	36N	BE	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	3BN	11E	5400
Komo Kulshan	21A17	31	37N	9E	B00
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A1Ba	27	3BN	10E	5800
Rocky Creek	21A12A	20	37N	BE	2100
Schreibers Meadow	21A10A	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21AB	25	37N	9E	4500

Nooksack River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	BE	5100
Glacier Creek	21A23	9-10	3BN	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Park	23B4	1	2BN	5W	5200

Morse Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cox Valley	23B14	31	29N	6W	4500

Elwha River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Hurricane	23B3	36	29N	7W	4500

Skokomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	2B	25N	5W	5200
Sundown Pass	23BB	25	24N	7W	3900

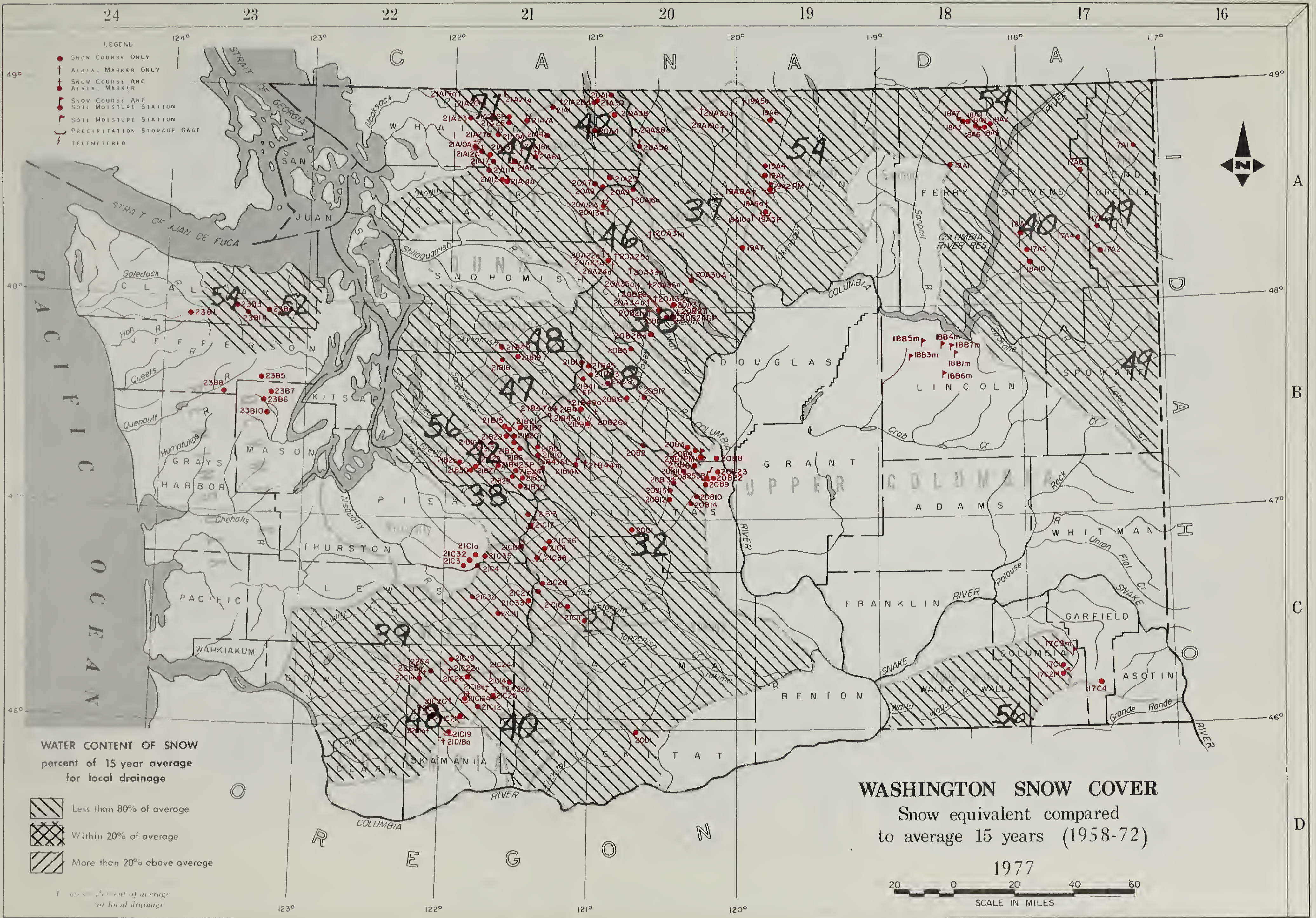
Soleduck River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Lake	23B1	14	2BN	9W	3900

LEGEND

NUMBERING SYSTEM EXAMPLE

21A7	SNOW COURSE ONLY
21A7a	AERIAL MARKER ONLY
21A7A	SNOW COURSE AND AERIAL MARKER
21A7M	SNOW COURSE AND SOIL MOISTURE STATION
21A7m	SOIL MOISTURE STATION
21A7P	SNOW COURSE AND PRECIPITATION STORAGE GAGE
21A7p	PRECIPITATION STORAGE GAGE
21A7SP	SNOW PILLOW


WASHINGTON SNOW COVER
Snow equivalent compared
to average 15 years (1958-72)
1977
LEGEND
Snow Course Only
Aerial Marker Only
Snow Course And Aerial Marker
Snow Course And Soil Moisture Station
Soil Moisture Station
Precipitation Storage Gage
Telemetered
WATER CONTENT OF SNOW
percent of 15 year average
for local drainage
Less than 80% of average
Within 20% of average
More than 20% above average
SCALE IN MILES
20 0 20 40 60
CANADA
IDAHO
OREGON
PACIFIC OCEAN
STRAIT OF GEORGIA
STRAIT OF JUAN DE FUCA
WHATCOM
SKAGIT
SNOHOMISH
OKANOGAN
FERRY
STEVENS
PEND OREILLE
SPOKANE
LINCOLN
DOUGLAS
CHELAN
KING
KITTITAS
GRANT
ADAMS
WHITMAN
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
BENTON
YAKIMA
KLICKITAT
SKAMANIA
CLARK
COWLITZ
LEWIS
WAHKIAKUM
PACIFIC
THURSTON
PIERCE
MASON
KITSAP
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Okanogan River

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Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paysayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	25E	2845

Methow River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650

Chelan Lake Basin

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	18	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500

Entiat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Creek G.S.	20828a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20827a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20820	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900

Wenatchee River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Berne-Mill Creek	21823	7	26N	15E	3170
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blewett Pass No. 2	2082	35	22N	17E	4270
Chiwaukum G. S.	20816	4	25N	17E	1810
Lake Wenatchee	2085	33	27N	17E	1970
Leavenworth R. S.	20817	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Stevens Pass Sand Shed	21845	12	26N	19E	3700

Wenatchee River (continued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Trough #2	20B25SP	10	20N	20E	5310

Colockum Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Colockum Creek Upper	20B22	11	20N	20E	5300
Colockum Creek Lower	20B23	1	20N	20E	4300

Squilchuck Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beehive Springs	2083	12	21N	19E	4400
Scout-A-Vista	20B4	18	21N	20E	3400

Stemilt Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Jump-Off	20B8	34	21N	20E	4450
Stemilt Slide	20B6	30	21N	20E	5000
Upper Wheeler	20B7PM	30	21N	20E	4400

Crab Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Creston-Kunz	18B1m	32	27N	34E	2440
Jack Woods	18B3m	28	27N	31E	2750
Krause	1884m	21	27N	33E	2420
Sheffels	1885m	17	27N	32E	2378
Sherman	18B7m	24	27N	33E	2440
Wheatridge	18B6m	24	25N	32E	2290

Yakima River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ahtanum R. S.	21C11	24	12N	14E	3100
Big Boulder Creek	2189	35	23N	14E	3200
Bumping Lake	21C8	23	16N	12E	3450
Bumping Lake New	21C36	13	16N	12E	3400
Bumping Ridge	21C38P	9	15N	12E	4600
Colockum Pass	20B9	25	20N	20E	5370
Cooke Creek	20810	17	19N	20E	4123
Domery Flat	21844m	15	20N	14E	2200
Fish Lake	2184	28	24N	14E	3371
Green Lake	21C10	3	12N	13E	6000
Grouse Camp	20811	29	21N	19E	5385
High Creek	20812	34	20N	19E	2930
Joe Lake	21846a	22	23N	12E	4624
Lake Cle Elum	21814M	15	20N	14E	2200
Lemah Creek	21847a	7	23N	13E	3327
Manastash	20C1	24	17N	16E	3935
Morse Lake	21C17	6	16N	11E	5400
Nanum	20813	4	20N	19E	3875
Trail Creek	20B14	20	19N	20E	3360
Tunnel Avenue	2188	13	21N	11E	2450
Van Epps Pass	20B26a	16	23N	15E	5925
Walters Flat	20815	22	20N	19E	3360
Waptus Lake	21849a	12	23N	13E	3024
White Pass (East Side)	21C28	2	13N	11E	4500
White Pass (Leach Lake)	21C27	1	13N	11E	4500

LOWER COLUMBIA DRAINAGE

Asotin Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Spruce Springs	17C4	9	8N	40E	5700

Mill Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Couse	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400

Klickitat River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Satus Pass	20D1	21	6N	17E	4030

White Salmon River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cultus Creek	21C12	35	7N	8E	4000

Lewis River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Blue Lake	21C22a	19	9N	8E	4800
Bob's Trail	21C21	25	8N	7E	2200
Calamity Ridge	22D1a	8	5N	5E	2500
Council Pass	21C18a	24	9N	9E	4200

Lewis River (continued)

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Divide Meadow	21C29a	21	9N	10E	5600
Grand Meadow	21C25	28	8N	9E	3500
Lone Pine Shelter	21C26	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6	36	8N	6E	2000
Oldman Pass	21D19	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13A	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000

Cowlitz River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Ohanapecosh	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Ghost Forest	21C4	23	15N	8E	4550
Longmire	21C3	29	15N	8E	2760
Paradise Park (New)	21C35	13	15N	8E	5500
Stem Glade	21C1	13	15N	8E	5050

White River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Corral Pass	21813	30	18N	11E	6000

Green River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Airstrip	21824	18	20N	11E	1800
Charley Creek	21825	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21827	14	20N	8E	2900
Grass Mountain No. 3	21828	12	20N	8E	2100
Lester Creek	21829	36	20N	10E	3100
Lynn Lake	21850	22	20N	8E	4000
Sawmill Ridge	21831	5	19N	11E	4700
Snowshoe Butte	21843SP	14	20N	11E	5000
Stampede Pass	21810	25	21N	11E	3860
Twin Camp	21830	18	19N	11E	4100

Cedar River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21821	30	22N	10E	3300
Mt. Gardner Aux.	21822	31	22N	10E	2500
Mt. Lindsay	21816	31	22N	9E	2500
Mt. Washington	21815	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	2186	24	21N	10E	3000
Tinkham Creek	21820	1	21N	10E	3400

Snoqualmie River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Alpine Meadow	21848	31	27N	9E	3500
Olallie Meadows	2182	19	22N	11E	3625
South Fork Tolt	21818	26	26N	9E	1900

Skykomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Lake Elizabeth	21819	33	26N	10E	2900

Skagit River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	16E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows New	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hozomeen Lake	20A7	19	40N	14E	2800
Thunder Basin	21A30	10	35N	14E	4200

Baker River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	8E	3800
Easy Pass	21A7A	19	39N	11E	5200
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12A	20	37N	8E	2100
Schreibers Meadow	21A10A	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500

Nooksack River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20A	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Park	2384	1	28N	5W	5200

Morse Creek

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Cox Valley	23814	31	29N	6W	4500

Elwha River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Hurricane	2383	36	29N	7W	4500

Skokomish River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Black and White	2387	17	24N	5W	4200
Black and White Lakes	2386	16	24N	5W	4700
Four Stream	23810	1	23N	6W	3000
Home Sweet Home	2385	28	25N	5W	5200
Sundown Pass	2388	25	24N	7W	3900

Soleduck River

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Deer Lake	23B1	14	28N	9W	3900

LEGEND

NUMBERING SYSTEM EXAMPLE

21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7A	Snow Course and Aerial Marker
21A7M	Snow Course and Soil Moisture Station
21A7m	Soil Moisture Station
21A7P	Snow Course and Precipitation Storage Gage
21A7p	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington
April 1, 1977

Snow surveys made in the state of Washington and in the tributary basins of British Columbia, Idaho, and western Montana have all improved from that which was reported last month. This improvement does not mean that there will be an abundant or even an adequate water supply in many cases, but the situation is not as grim as it was on March 1. The snow pack is still well below normal. As a result of the improved snow measurements, the resultant forecasts have generally been increased from that which was reported last month. Precipitation during the month was not always above normal, but generally it was near normal in all cases. The water has not started to melt out of the snow pack at the higher elevations yet, so the soil mantle beneath the snow pack is still dry. Along the lower elevation zones, the snow pack has decreased and in many cases is now gone, with very little runoff occurring. The reservoir picture is in generally good shape. Most power reservoirs have below average amounts of water in storage, while most irrigation reservoirs have above normal amounts. These figures are totally manipulated by the need for power generation and/or conservation of water for later irrigation use. To sum up the overall situation in the state - the water users will have to conserve every drop of water, and even with those conservation efforts applied, serious water shortages will occur throughout the state.

SNOW COVER

The snow pack in the Upper Columbia Basin is now 42 percent of normal. This ranges from a low of 32 percent on the Yakima Basin to a high of 54 percent for the Kettle. Percentage increases from last month range from 10 to 22 percent. The least amount of increase was on the Entiat River Drainage, with the greatest on the Methow. The snow pack in the Lower Columbia Drainage now ranges from 39 percent of normal on the Cowlitz to 56 percent in Mill Creek, a tributary of the Walla Walla River. The improvement in this area ranges from 27 percent increase on the Cowlitz River to 47 percent increase on the Mill Creek Drainage. The best improvements occurred in the Puget Sound area. The Cedar River, which is the main water supply for the city of Seattle, improved 52 percent from its March 1 measurement of 4 percent of normal to the April 1 reading of 56 percent. The high point is still along the British Columbia border, the Nooksack Drainage. This area now has a snow pack that is 71 percent of average with an improvement of 27 percent from that which was reported last month. On the Olympic Peninsula, the two snow courses have improved 44 percent from March 1 readings and are now standing at 53 percent of normal.

RESERVOIRS

The five irrigation reservoirs in the Yakima Basin have 890,000 acre feet in storage as of April 1. The capacity of these reservoirs is 1,066,000 acre feet. Storage now is 21 percent greater than average in these reservoirs. Lake Keechelus has the poorest amount of water in storage because it was drawn down for maintenance and the runoff has been so poor this past fall that it has not recovered. This reservoir is only 84 percent of average. The two small reservoirs in the Okanogan Drainage of Washington, Conconully and Salmon Lake, are just about normal for this time of year. One reservoir is 75 percent of average and the other 24 percent above. Power reservoirs such as Roosevelt, Ross, and Chelan have water in storage that is 89 percent of average, but only a third of their capacity as of this date. The one reservoir with critical storage is Ross Reservoir. This reservoir has only 61 percent of average amount of water. The question of whether these reservoirs will fill or not depends upon the need for water during this runoff season, the need for power, and what kind of weather we are going to have in the next four months.

PRECIPITATION

For a change, the rainfall over the state has been near normal or even above this past month. The Columbia in Canada had precipitation 89 percent of average; the Pend Oreille-Spokane, 92 percent; southeastern Washington, 91 percent; and the central Washington area, 97 percent. The above normal drainage divisions were northeastern Washington at 10 percent above normal; northcentral Washington, 6 percent above; southwestern slopes of the Cascades, 16 percent; and the big one, the northwestern slopes of the Cascades at 40 percent above. This as reported by the National Weather Service. When these precipitation figures are added to the previous winter rainfall, the situation still is not good. The Columbia in Canada precipitation for the November through March period is only 58 percent of normal; the Pend Oreille-Spokane, 47 percent; northeastern Washington, 40 percent; southeastern Washington, 41 percent, as is central Washington. Northcentral Washington is up to 50 percent and the northwestern slopes of the Cascades, because of this well above normal March precipitation, is 64 percent. The southwestern slopes had 44 percent of average precipitation during this period.

STREAMFLOW

March runoff was all below normal and some well below normal. The high point was the Skagit River, as measured at Concrete, which was 89 percent of normal; this corrected for storage in Ross, Diablo, and Gorge Reservoirs. The low point occurred into the southeastern portion of the state where the Palouse River, as measured at Hooper, had a flow that was only 16 percent of average. The main stem of the Columbia River, as measured at The Dalles, had a flow that was less than half of normal - 45 percent. Forecasts have all been revised and generally improved from that which was reported last month. The low point is still the Yakima River at Parker, but even at this point, the forecast has been improved 6 percent. Numerical forecasts can be found on the following pages.

STREAMFLOW FORECASTS - APRIL 1977

The following summarized runoff forecasts are based principally on mountain snowcover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. Streamflow figures for 1976 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1977	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Forecast period	1976	1975	1974	15-Yr. Average 58-72
COLUMBIA BASIN							
COLUMBIA RIVER SYSTEM							
Columbia River	33400	72	Apr-Sept	53937	41101	54411	46410
at Birchbank 1/	25300	67	Apr-July	38979	32944	44439	37548
	15800	57	Apr-June	26054	22429	31853	27549
Columbia River	42100	61	Apr-Sept	89074	66501	88368	69020
at Grand Coulee 1/	34000	58	Apr-July	62715	55870	75997	58368
	23000	50	Apr-June	46556	41377	58725	46049
Columbia River	45200	60	Apr-Sept	86849	73553	96238	75290
bl. Rock Island Dam 1/	36600	57	Apr-July	67890	62727	83339	64181
	26000	51	Apr-June	50520	46759	64205	50594
Columbia River	55400	53	Apr-Sept	122876	108901	139431	104600
at The Dalles, OR 1/	43100	48	Apr-July	99965	94195	123171	89875
	30650	42	Apr-June	79164	73012	98926	73143
PEND OREILLE RIVER SYSTEM							
Pend Oreille River							
bl. Box Canyon	6700	42	Apr-Sept	17638	16946	21551	15950
	6100	42	Apr-July	15979	15271	20103	14677
	4600	36	Apr-June	13687	11814	16732	12767
KETTLE RIVER SYSTEM							
Kettle River	1220	65	Apr-Sept		1860	2831	1873
nr. Laurier	1160	65	Apr-July		1779	2752	1794
	1030	63	Apr-June		1592	2476	1640
Colville River	62	42	Apr-Sept		225	286	148
at Kettle Falls	57	42	Apr-July		203	269	137
	48	38	Apr-June		187	252	128

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1977	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet: Fore-cast period	1976	1975	1974	15-Yr. Average 58-72
SPOKANE RIVER SYSTEM*							
Spokane River	990	33	Apr-Sept	3215	3418	4801	2982
at Post Falls, ID 2/	975	33	Apr-July	3069	3275	4682	2899
	925	33	Apr-June	2884	3033	4409	2773
OKANOGAN RIVER SYSTEM							
Similkameen River	715	47	Apr-Sept	1967	1434	2216	1516
nr. Nighthawk	680	48	Apr-July	1743	1339	2092	1424
	570	47	Apr-June	1357	1092	1710	1222
Okanogan River	790	46	Apr-Sept	2135	1582	2757	1723
nr. Tonasket	740	47	Apr-July	1785	1437	2534	1582
	640	47	Apr-June	1361	1181	2029	1349
METHOW RIVER SYSTEM							
Methow River	430	42	Apr-Sept		992	1665	1031
nr. Pateros	360	37	Apr-July		911	1555	963
	270	33	Apr-June		728	1268	832
CHELAN RIVER SYSTEM							
Chelan River	720	57	Apr-Sept	1467	1364	1749	1253
at Chelan 3/	630	57	Apr-July	1189	1210	1508	1112
	510	58	Apr-June	829	858	1115	881
Stehekin River	540	60	Apr-Sept		1040	1223	904
at Stehekin	460	59	Apr-July		796	996	776
	370	62	Apr-June		526	717	600
Entiat	105	44	Apr-Sept		268	387	239
nr. Ardenvoir	95	43	Apr-July		244	347	220
	85	46	Apr-June		182	256	180
WENATCHEE RIVER SYSTEM							
Wenatchee River	720	55	Apr-Sept		1396	1910	1312
at Plain	670	56	Apr-July		1262	1652	1187
	550	58	Apr-June		924	1188	956
Wenatchee River	950	53	Apr-Sept	2134	1920	2556	1786
at Peshastin	880	54	Apr-July	1795	1738	2232	1629
	750	57	Apr-June	1261	1279	1632	1324

* Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1977	% 15-Yr. Avg.	Fore-cast period	Seasonal Streamflow in Thousands of Acre-Feet 1976	1975	1974	15-Yr. Average 58-72
WENATCHEE RIVER SYSTEM (Cont.)							
Stemilt Basin nr. Wenatchee	65*	47	May-Sept	144*	134*	141*	138*
Icicle Creek	240	65	Apr-Sept				371
nr. Leavenworth	190	56	Apr-July				342
	140	50	Apr-June				279
YAKIMA RIVER SYSTEM							
Yakima River	81	57	Apr-Sept	153	168	231	142
nr. Martin 4/	75	57	Apr-July	140	154	214	131
	65	56	Apr-June	116	127	170	116
Yakima River							
at Cle Elum 5/	530	55	Apr-Sept		1112	1463	968
	490	56	Apr-July		1012	1335	877
	440	58	Apr-June		852	1067	764
Yakima River	480	28	Apr-Sept		2229	3216	1730
nr. Parker 6/	460	27	Apr-July		2141	3092	1701
	400	25	Apr-June		1859	2601	1580
Kachess River	66	53	Apr-Sept	131	154	207	125
nr. Easton 7/	62	53	Apr-July	119	145	193	118
	60	57	Apr-June	97	120	156	106
Cle Elum River	270	57	Apr-Sept	560	539	745	477
nr. Roslyn 8/	250	57	Apr-July	483	492	664	437
	220	59	Apr-June	366	388	500	372
Bumping River	70	48	Apr-Sept	174	179	230	146
nr. Nile 9/	60	45	Apr-July	150	163	206	134
	55	49	Apr-June	108	119	152	112
American River	60	47	Apr-Sept		149	203	128
nr. Nile	55	47	Apr-July		137	181	118
	45	45	Apr-June		104	137	100
Tieton River	105	43	Apr-Sept	308	299	402	247
at Tieton Dam 10/	90	43	Apr-July	245	253	334	211
	85	49	Apr-June	180	187	253	172

* Thousands of Miners' Inches.

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

Basin, Stream and Station	Forecast Runoff 1977	% 15-Yr. Avg.	Seasonal Streamflow in Thousands of Acre-Feet: Fore-cast period	1976	1975	1974	15-Yr. Average 58-72
YAKIMA RIVER SYSTEM (Cont.)							
Naches River	300	34	Apr-Sept		1054	1428	889
nr. Naches 11/	265	33	Apr-July		952	1286	810
	260	37	Apr-June		761	1038	698
Ahtanum Creek	17	35	Apr-Sept		57	83	48
nr. Tampico 12/	15	34	Apr-July		51	76	44
	14	36	Apr-June		44	64	39
LOWER COLUMBIA RIVER SYSTEM							
Mill Creek	17	64	Apr-Sept		39	57	27
Nr. Walla Walla	14	58	Apr-July		34	51	24
	12	57	Apr-June		30	47	21
Lewis River	765	57	Apr-Sept	1333	969	1952	1341
at Ariel 13/	630	55	Apr-July	1161	1022	1760	1151
	565	55	Apr-June	1012	885	1489	1028
Cowlitz River	1220	58	Apr-Sept		2127	3323	2101
Bl. Mayfield Dam	1050	57	Apr-July		1852	2976	1846
	960	61	Apr-June		1451	2416	1578
Cowlitz River	1660	60	Apr-Sept	3030	2646	4128	2773
nr. Castle Rock 14/	1420	59	Apr-July	2550	2278	3694	2416
	1260	60	Apr-June	2115	1816	3029	2083
OLYMPIC PENINSULA							
DUNGENESS RIVER SYSTEM							
Dungeness River	115	70	Apr-Sept		149	205	165
nr. Sequim	95	69	Apr-July		118	162	137
	70	67	Apr-June		82	111	104
PUGET SOUND							
SKAGIT RIVER SYSTEM							
Skagit River	1250	55	Apr-Aug		2241	2998	2260
at Newhalem 15/							
CEDAR RIVER SYSTEM							
Cedar River	56	62	Apr-Sept		101	145	91
at Cedar Falls							

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.
12/ Observed flow of North and South Forks (Combined).
13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.

Basin, Stream and Station	Forecast Runoff 1977	Seasonal Streamflow in Thousands of Acre-Feet: % 15-Yr. Avg.	Fore-cast period	1976	1975	1974	15-Yr. Average 58-72
GREEN RIVER SYSTEM							
Green River bl. Howard Hanson Dam 16/	150	51	Apr-Sept		347	487	312
ELWHA RIVER SYSTEM							
Elwha River	375	69	Apr-Sept		544	752	546
nr. Port Angeles	315	69	Apr-July		435	606	456

16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1977 as percent of the same date in 1976 and 1975 and average of record

Tributary Basin	No. of Courses Average	Snow Water Expressed as percent of 1976	1975	1958-72 Avg.
UPPER COLUMBIA BASIN				
Pend Oreille	18	47	40	49
Kettle	13	52	46	54
Colville	5	44	27	40
Spokane	12	42	40	49
Okanogan	38	49	42	54
Methow	8	38	28	37
Chelan	4	34	40	46
Entiat	10	33	36	38
Wenatchee	9	31	29	38
Yakima	18	33	31	32
Ahtanum	2	32	24	29
LOWER COLUMBIA				
Mill Creek	3	37	39	56
White Salmon	2	37	37	40
Lewis	17	37	47	48
Cowlitz	3	38	36	39
PUGET SOUND				
White	3	36	33	38
Green	9	47	35	42
Cedar	7	37	31	56
Snoqualmie	4	39	43	47
Skykomish	3	39	40	48
Skagit	17	29	35	42
Baker	11	34	43	49
Nooksack	5	45	58	71
OLYMPIC PENINSULA				
Elwha	1	42	53	54
Dungeness	1	-	-	52

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured (April) 1977	1976	1975	Normal*
		COLUMBIA				
Spokane	Coeur d'Alene Lake	225.1	30.3	118.3	85.5	174.1
Columbia	Franklin D. Roosevlet Lake	5232.0	1673.1	1196.3	1682.3	1821.8
Columbia	Banks Lake	714.9	566.1	704.2	688.2	581.4
Okanogan	Conconully Reservoir	13.0	8.8	11.3	11.7	11.8
Okanogan	Salmon Lake	10.5	9.3	9.8	9.2	7.5
Chelan	Lake Chelan	676.1	205.4	377.7	62.0	179.3
		YAKIMA				
Yakima	Keechelus Lake	157.8	91.0	129.1	96.1	107.8
Kachess	Kachess Lake	239.0	214.4	207.6	163.8	190.2
Cle Elum	Lake Cle Elum	436.9	431.0	321.9	266.4	283.2
Bumping	Bumping Lake	33.7	13.6	5.4	2.7	11.4
Tieton	Rimrock Lake	198.0	139.8	151.4	128.6	141.7
		PUGET SOUND				
Skagit	Ross Reservoir	1404.1	468.1	861.4	531.4	768.5
Skagit	Diablo Reservoir	90.6	87.1	89.9	85.3	85.5
Skagit	Gorge Reservoir	9.8	8.3	8.2	8.2	-

1/ Based on Active Storage

* 15-Year Average 1958-72

SOIL MOISTURE - APRIL

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches): Total Capacity	Soil Moisture Content (Inches) as of Apr. 1 1977	1976	1975
OKANOGAN							
Salmon Meadows	19A2M	4500	48	5.4	2.0	3.4	3.1
Trout Creek	3-M	3600	48	7.3	3.4	-	3.4
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	-	-	-
Helmers	17C2M	4400	48	12.0	-	-	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	7.9	12.6	9.0

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	(Inches): Total Capacity	Soil Moisture Content (Inches) as of Oct. 1 1976	1975	1974
OKANOGAN							
Salmon Meadows	19A02M	4500	48	5.4	3.4	3.2	1.8
Trout Creek	3-M	3600	48	7.3	3.4	3.1	3.0
YAKIMA							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
WALLA WALLA							
Couse	17C3m	3650	48	11.1	-	7.3	-
Helmers	17C2M	4400	48	12.0	-	6.5	-
WENATCHEE							
Upper Wheeler	20B7M	4400	48	12.7	-	8.6	5.4

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Division	FALL Sept-Oct Observed	FALL 1976 2/ Departure	WINTER Nov. 1976 - Mar. 1977 2/ Observed	WINTER Departure
Columbia in Canada	3.10	- 1.92	8.92	- 6.59
Pend Oreille - Spokane	1.54	- 2.50	8.23	- 9.32
Northeastern Washington	0.87	- 1.60	3.80	- 5.60
Southeastern Washington	1.45	- 1.06	4.28	- 6.15
Central Washington	1.24	- 3.51	11.28	-16.25
North Central Washington	0.61	- 0.98	3.26	- 3.28
Northwest Slope Cascades	6.65	- 6.56	35.21	-20.18
Southwest Slope Cascades	4.30	- 4.37	18.34	-23.30

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.

Southeastern Washington - Touchet, Tucannon and Palouse Drainages.

Central Washington - Yakima, Wenatchee and Chelan Drainages.

North Central Washington - Methow and Okanogan Drainages.

Northwest Slope Cascades - Puget Sound Drainages.

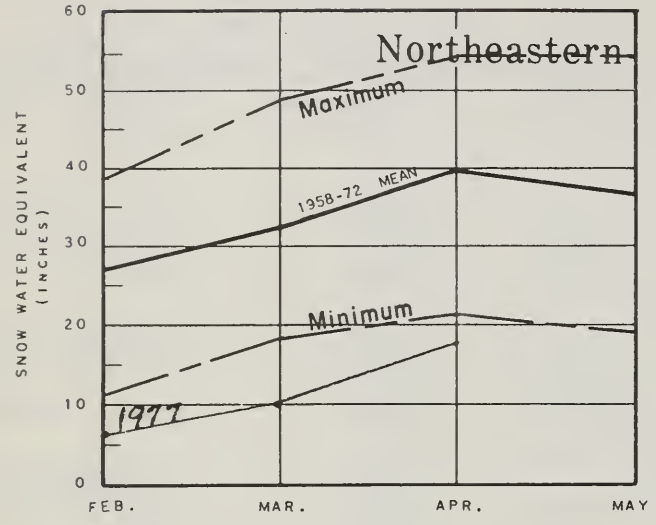
Southwest Slope Cascades - Lower Columbia Drainages.

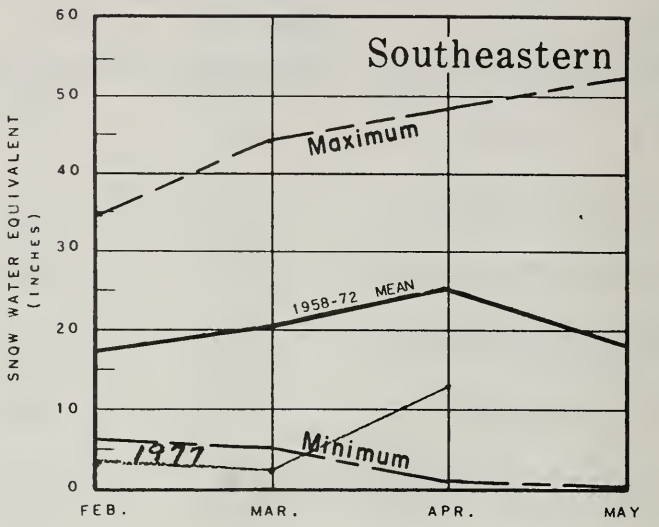
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service

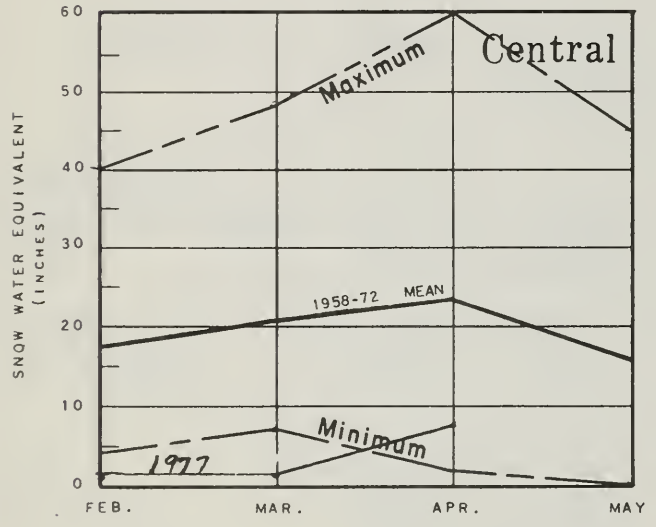
2/ - Departure from 15-year (1958-72) drainage division average.

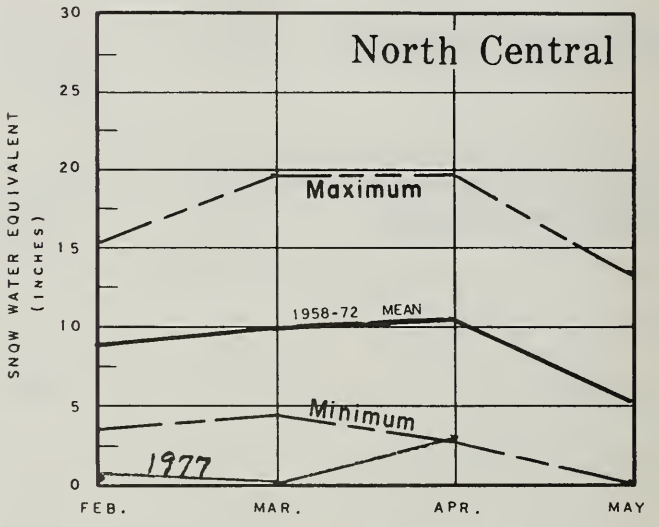
WASHINGTON SNOW COVER

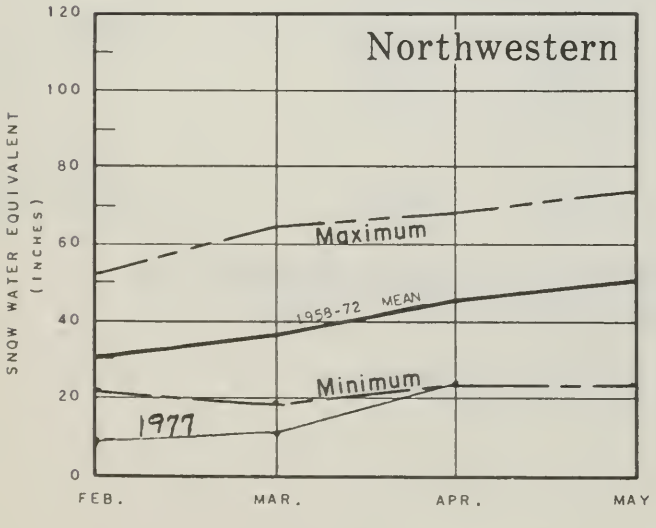
DRAINAGE AREAS

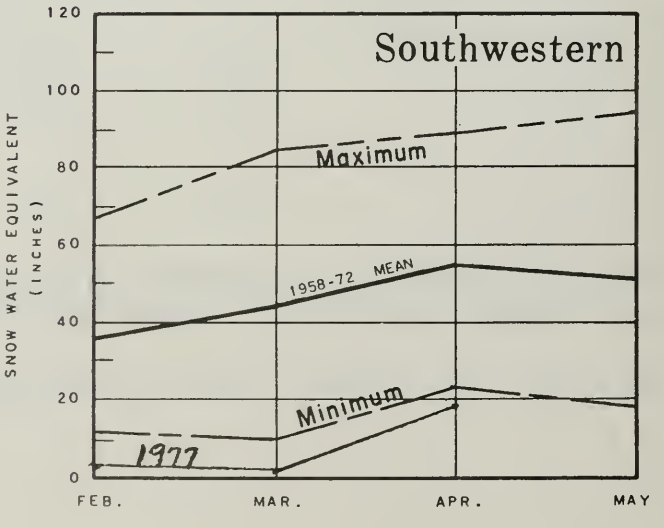








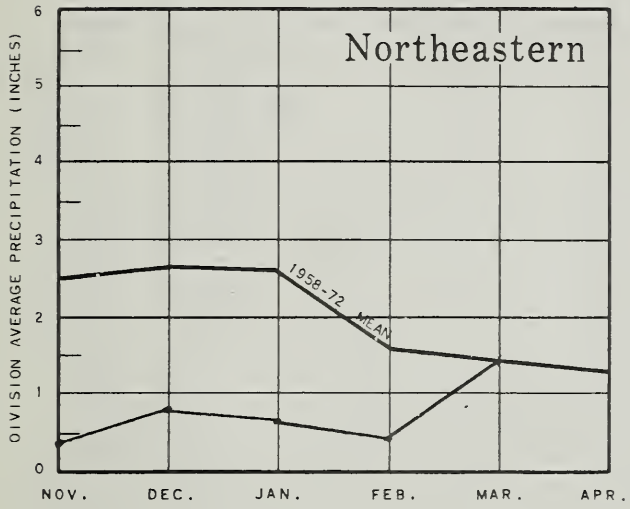


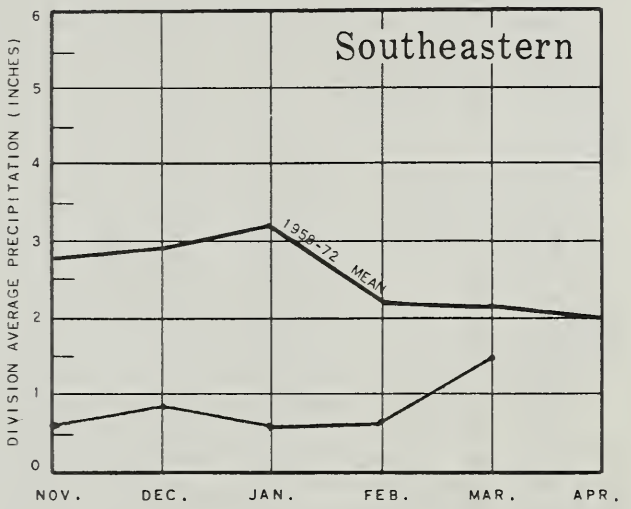


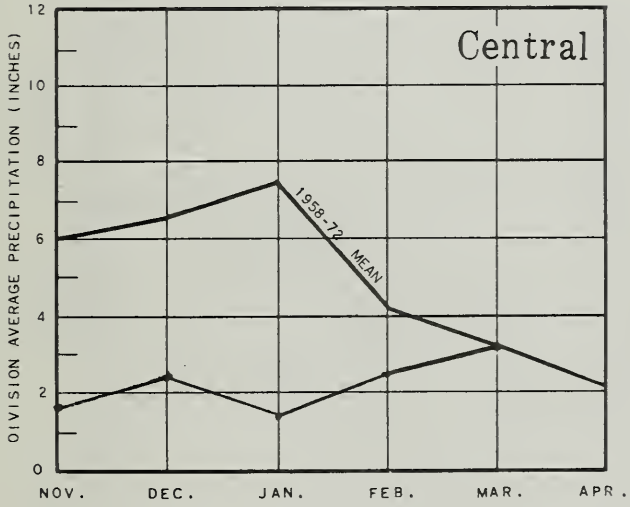
WASHINGTON VALLEY PRECIPITATION

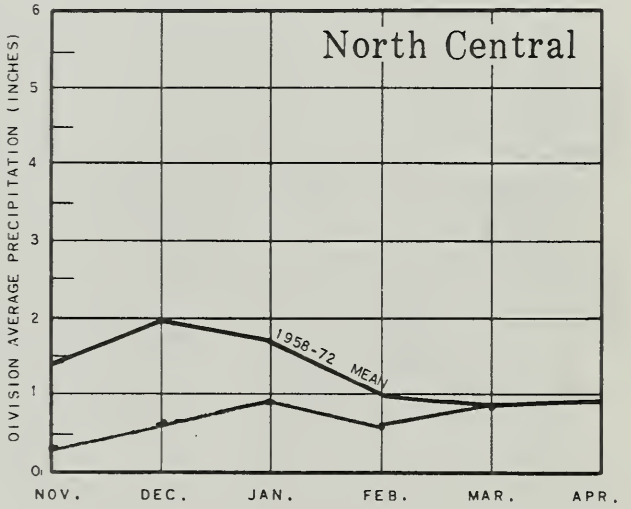
1976-1977

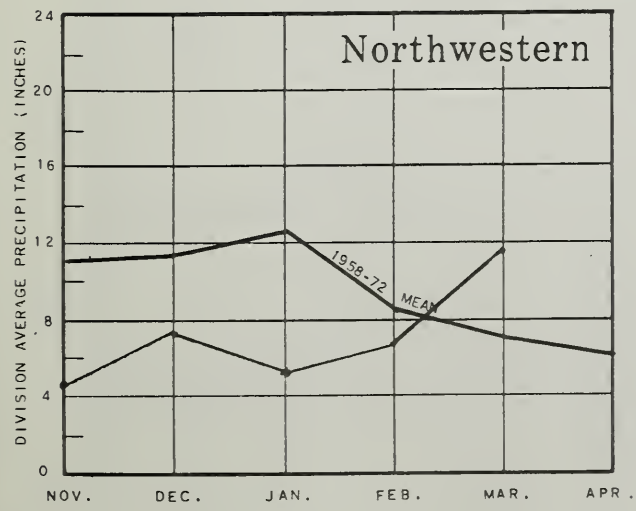
DRAINAGE AREAS

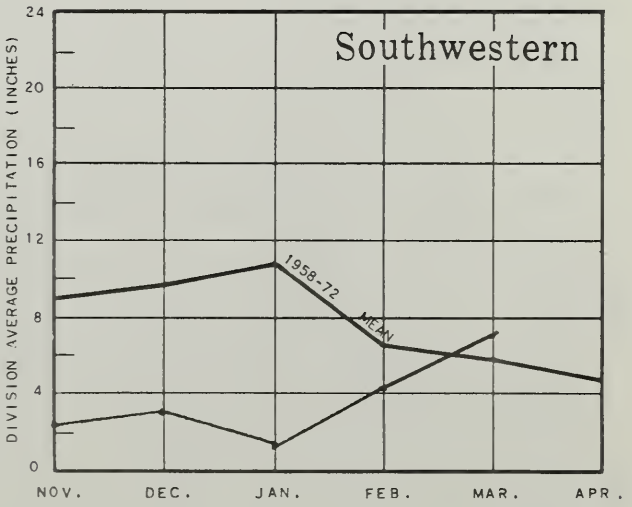






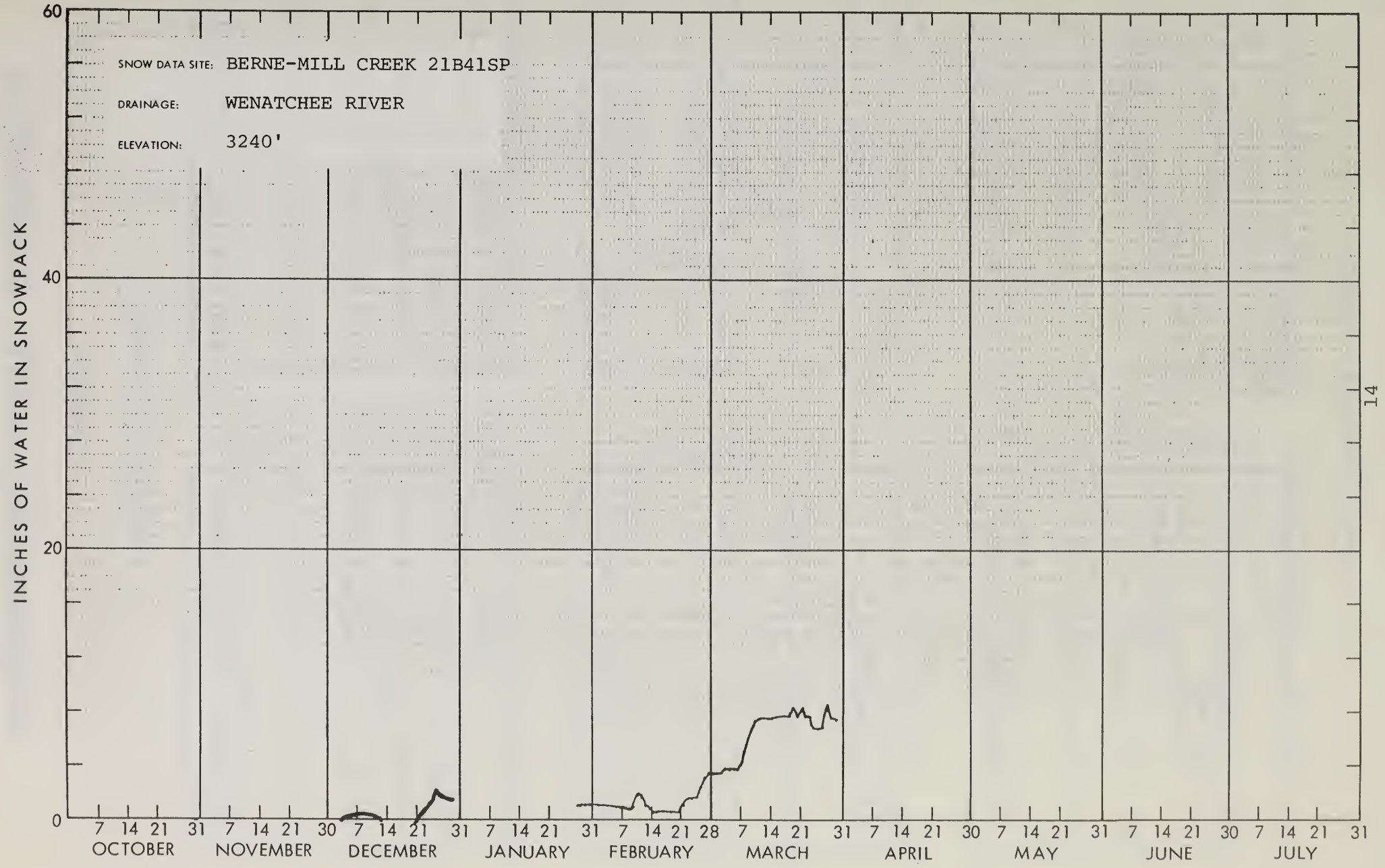






Preliminary Analysis by National Weather Service

WSFB-X13C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DRAINAGE: WENATCHEE RIVER
ELEVATION: 3240'
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40
20
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
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MAY
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JULY
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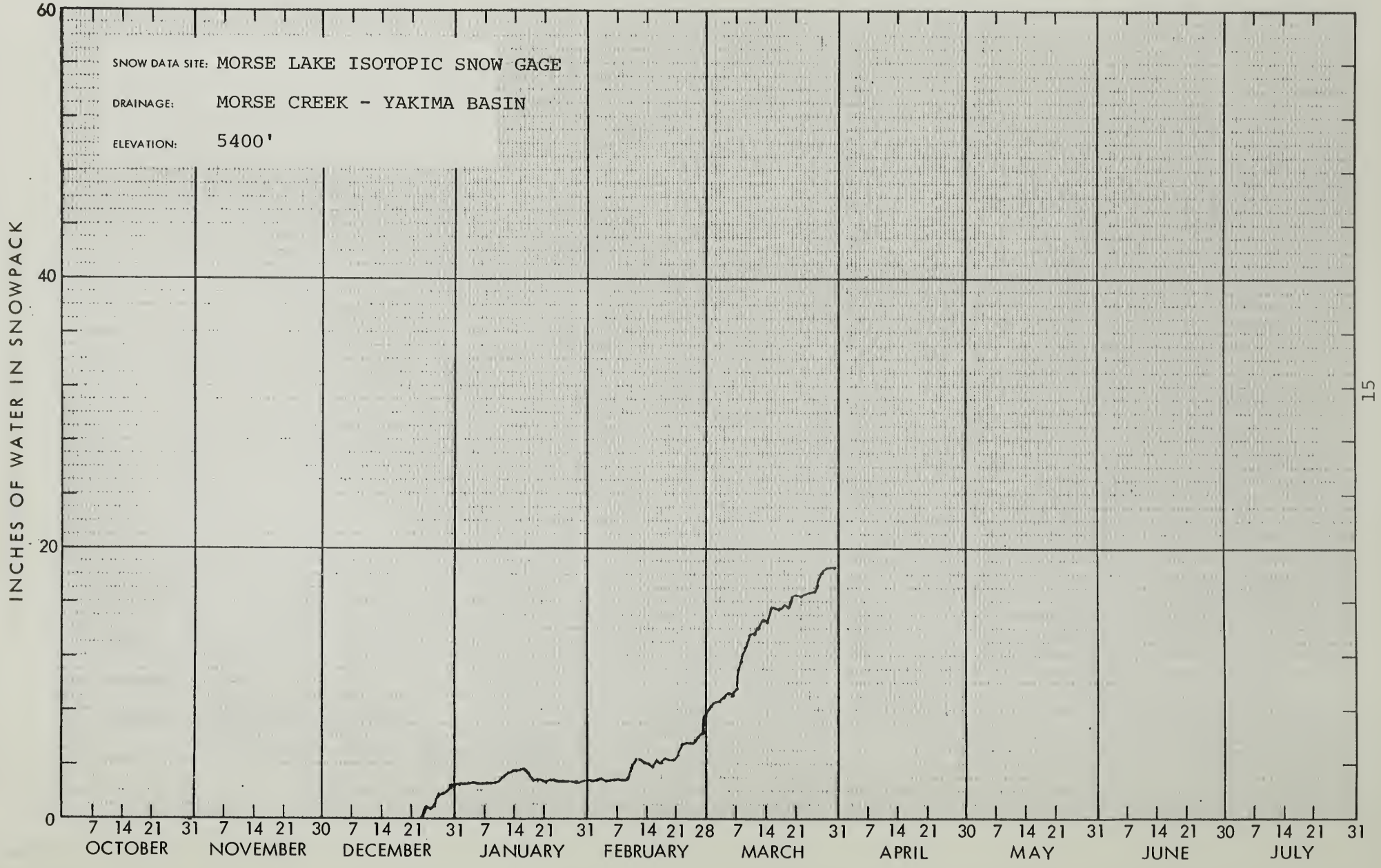
WSFB-X13C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DRAINAGE: MORSE CREEK - YAKIMA BASIN
ELEVATION: 5400'
INCHES OF WATER IN SNOWPACK
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40
20
0
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
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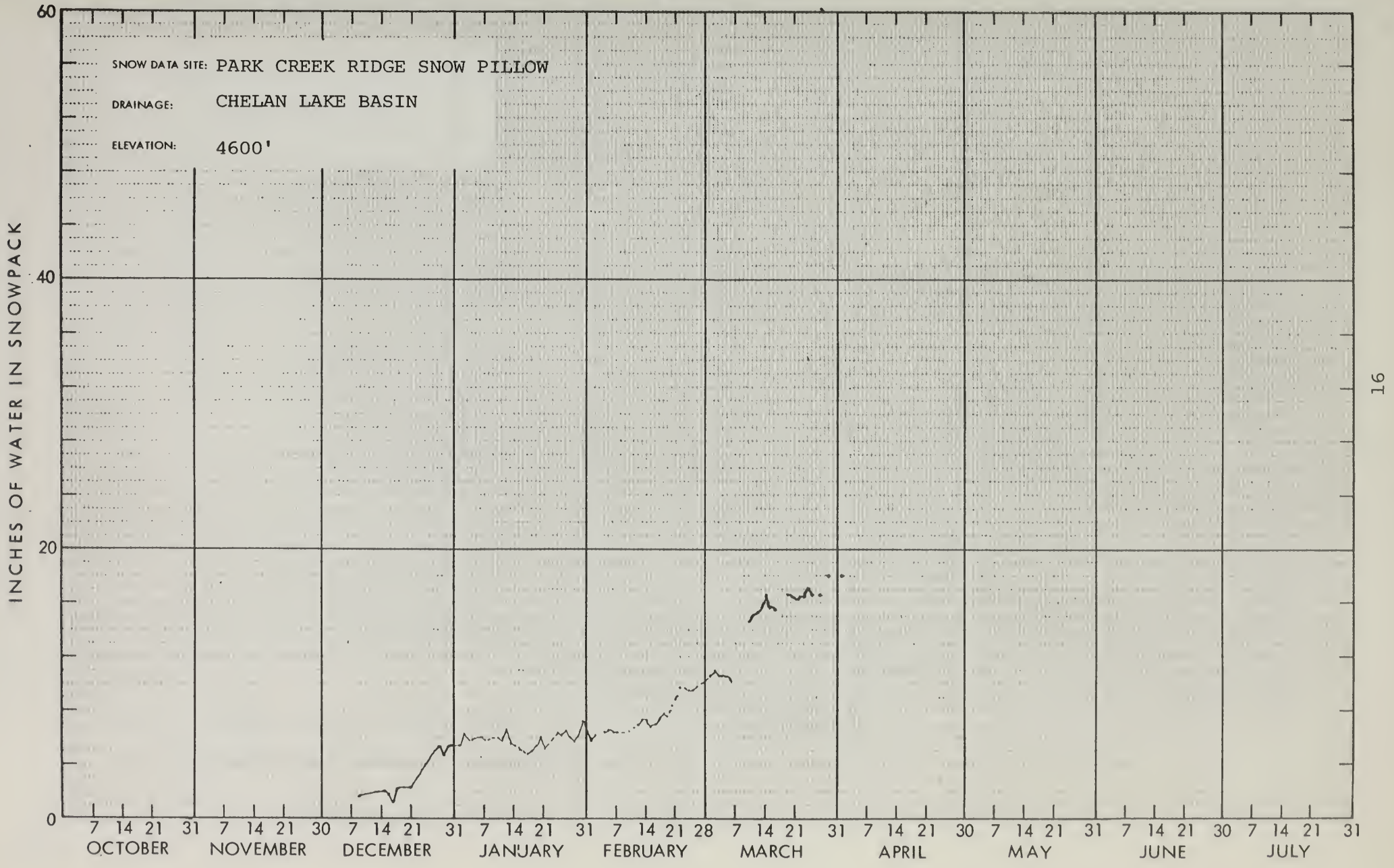
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DRAINAGE: CHELAN LAKE BASIN
ELEVATION: 4600'
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0
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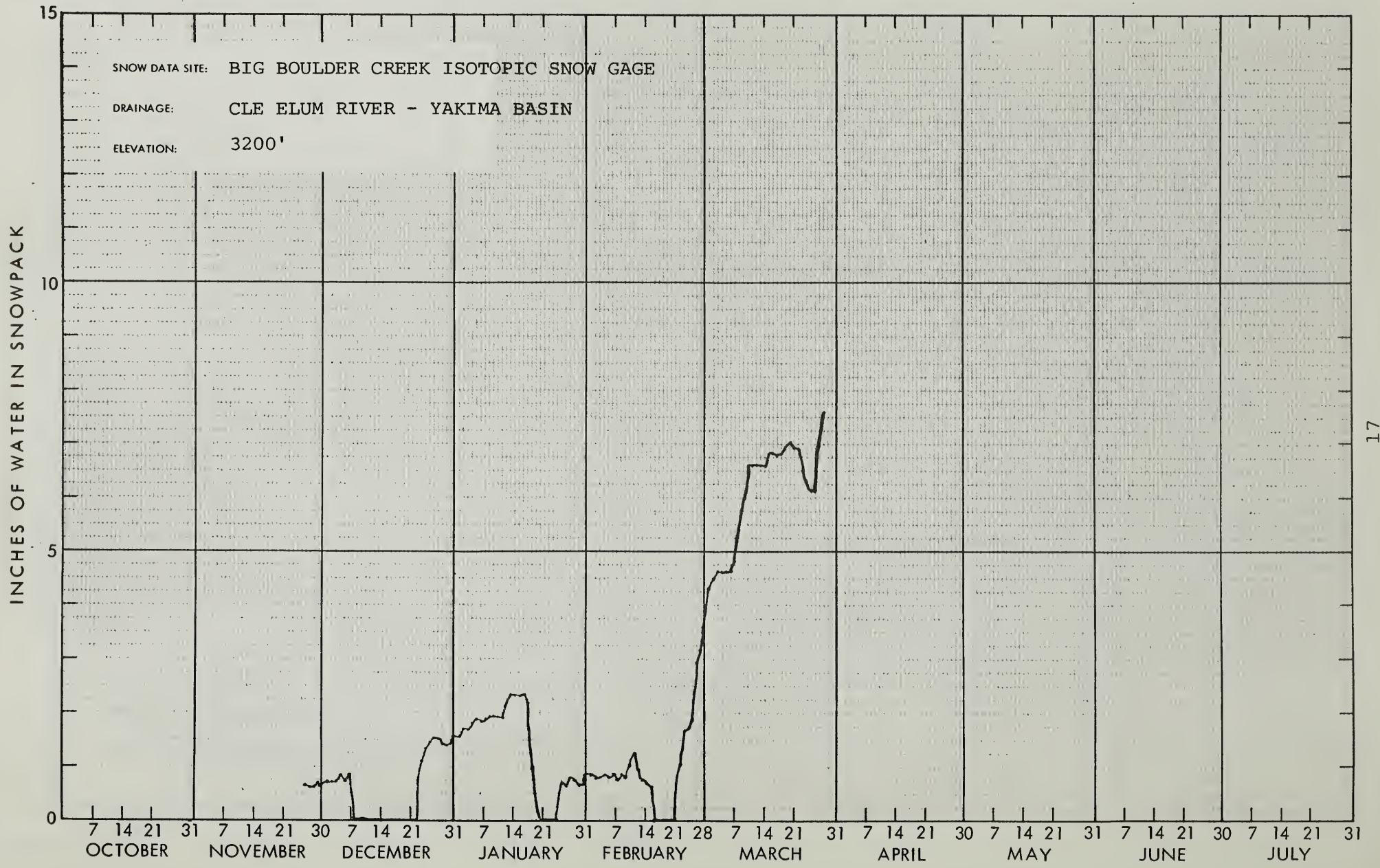
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DRAINAGE: CLE ELUM RIVER - YAKIMA BASIN
ELEVATION: 3200'
INCHES OF WATER IN SNOWPACK
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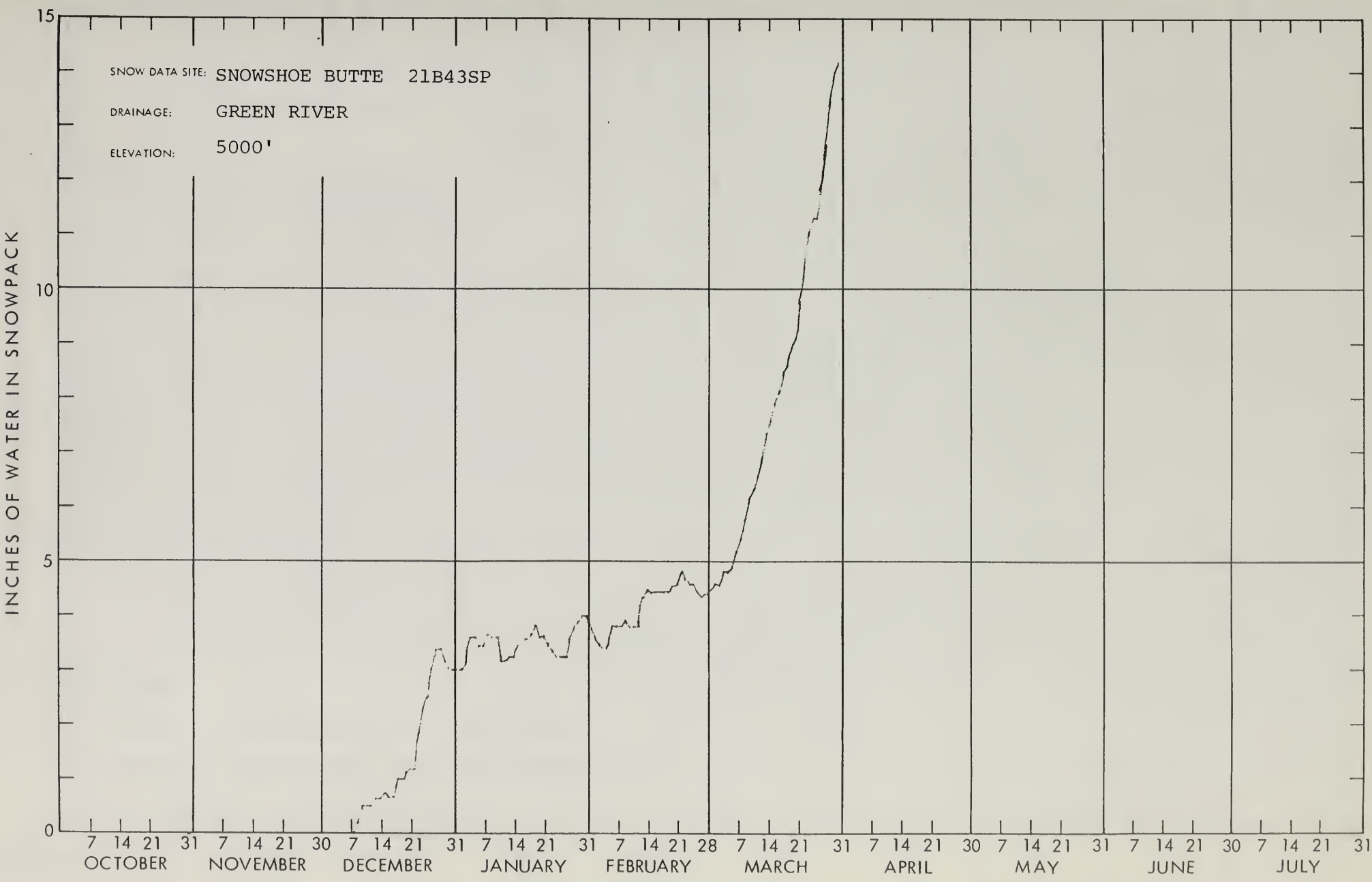
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DRAINAGE: GREEN RIVER
ELEVATION: 5000'
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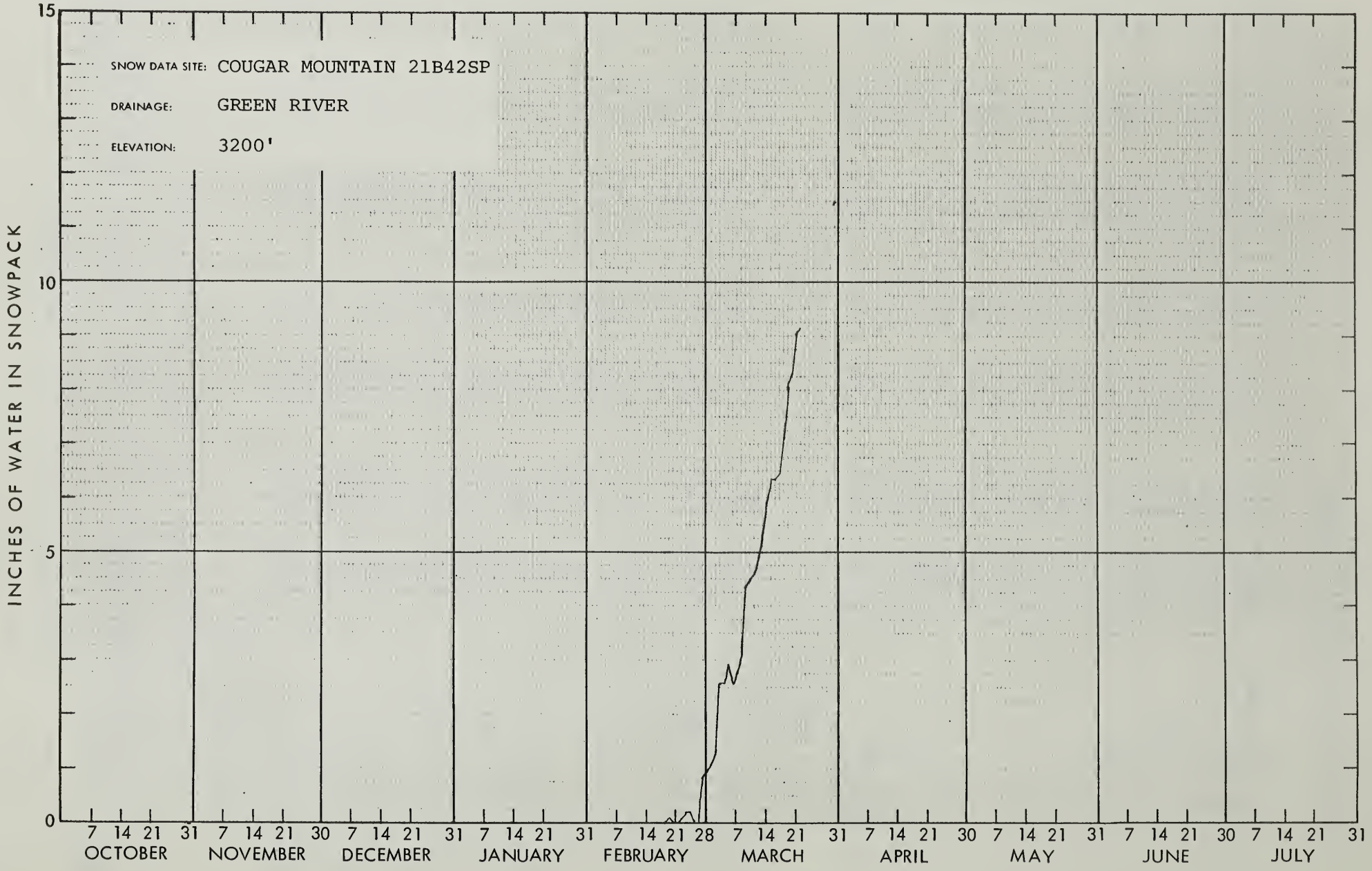
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DRAINAGE: GREEN RIVER
ELEVATION: 3200'
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SNOW DATA TO APRIL 1, 1977 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
UPPER COLUMBIA DRAINAGE							
PEND OREILLE RIVER							
Baree Creek	15B11	5500	4/1	83	29.5	59.8	49.4
Baree Midway	15B16	4600	3/31	70	23.8	45.0	37.7
Baree Trail	15B15	3800	3/31	13	3.8	14.3	9.6
Benton Meadow	16A02	2344	3/28	0	0.0	5.2	3.4
Benton Spring	16A03	4900	3/28	29	7.8	16.0	19.4
Boyer Mountain	17A02	5250	3/28	42	11.4	24.5	27.9
Brush Creek Timber	14A13	5000	3/29	22	5.4	10.8	13.1
Bunchgrass Meadow	17A01	5000	3/29	48	13.4	26.8	31.4
Chewelah	17A04	4923	4/2	31	8.8	14.8	18.5
Heart Lake Trail	14C10	4800	3/31	43	11.6	30.0	23.4
Hoodoo Basin	15C10	6000	3/31	82	23.0	62.7	53.8
Hoodoo Creek	15C01	5900	3/31	75	22.4	58.4	50.3
Lookout	15B02	5250	3/14	58	15.4	34.6	35.6
			3/28	62	18.6	39.0	38.1
Mosquito Ridge	16A04A	5100	3/31	61	19.6	41.4	40.3
Nelson	19-Can	3050	3/15	30	6.5	-	-
			3/31	32	8.7	16.3	15.9*
Schweitzer Bowl	16A06	4500	3/30	51	17.8	28.5	31.7
Schweitzer Ridge	16A05	6100	3/30	64	21.4	44.3	48.3
Smith Creek	16A01	4800	3/30	82	25.1	47.0	48.5
Winchester Creek	17A03	2970	3/28	13	4.6	10.6	11.8
KETTLE RIVER							
Barnes Creek	90-Can	5300	3/25	63	18.0	23.7	21.3*
Big White Mtn.	154-Can	5500	3/30	54	14.1	25.0	21.5*
Bluejoint Mtn.	244-Can	7500	3/26	55	14.9	32.1	-
Boulder Road	18A02	1450	3/31	0	0.0	3.1	2.6
Butte Creek	18A03	4070	3/31	20	5.8	8.9	10.1
Cabin Creek	18A08	3170	3/31	16	4.5	8.8	9.2
Carmi	126-Can	4100	3/30	20	4.6	8.4	6.9*
Farron # 1	17-Can	4000	3/30	27	6.9	14.0	13.6*
Farron # 2	243-Can	4000	3/30	28	7.6	13.3	15.5*
Goat Creek	18A04	3595	3/31	5.8	1.8	7.8	6.0
Graystoke Lake	5-Can	5950	3/29	43	11.4	19.8	24.5*
Monashee Pass	48A-Can	4500	3/25	4.5	12.4	16.2	14.2*
Old Glory Mtn.	42-Can	7000	3/29	52	14.1	35.0	29.3*
Snow Caps Creek	18A05	2150	3/31	0	0.0	3.6	2.3
Snow Caps Trail	18A06	2720	3/31	4.6	1.4	6.8	5.7
Summit G. S.	18A07	4600	3/31	18	4.4	8.0	8.6
Trapping Creek Lower	166-Can	3050	3/30	5.1	2.2	7.0	4.1*
Trapping Creek Upper	165-Can	4450	3/30	33	8.6	13.3	10.6*

Average based on 1958-72 average

* Average for years of record

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1977 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
COLVILLE RIVER							
Baird	17A06	3215	4/2	0	0.0	7.5	5.7
Carlson	18A09	2885	4/2	0	0.0	2.6	2.6
Chewelah	17A04	4925	4/2	31	8.8	14.8	18.5
Stranger Mountain	17A05	4990	4/2	24	8.0	11.4	14.6
Togo	18A10	3370	4/2	13	4.8	12.4	12.5
SPOKANE RIVER							
Above Burke	15B08	4100	3/28	50	15.3	29.6	25.6
Above Roland	15B07	4350	3/31	48	15.0	41.3	35.8
Below Roland	15B06	3770	3/31	15	5.1	19.8	17.4
Copper Ridge	16B02	4800	3/29	46	14.6	31.6	30.1
Forty-nine Meadows	15B03	5000	4/4	54	13.6	29.6	34.9
Fourth of July Summit	16B03	3100	3/14	18	5.6	12.6	9.3
			3/28	17	6.0	13.6	7.8
Granite Peak	15B13A	6000	4/4	78	19.8	43.6	47.5
Kellogg Peak	16B05A	5560	3/31	50	15.2	37.9	34.7
Lookout	15B02	5250	3/14	58	15.4	34.6	35.6
			3/28	62	18.6	39.0	38.1
Lost Lake	15B14A	6000	4/4	91	25.2	56.2	62.1
Lower Sands Creek	16B01	3400	3/29	36	12.1	22.4	20.7
Medicine Ridge	15B04A	6150	4/4	82	20.5	47.4	48.1
Mosquito Ridge	16A04A	5110	3/31	61	19.6	41.4	40.3
Roland Summit	15B05A	5200	3/31	49	16.0	47.9	39.2
Sherwin	16C01	3200	4/1	25	6.9	18.7	13.8
Sunset	15B09A	5600	3/31	57	18.0	41.1	39.3
SANPOIL RIVER							
Sherman Creek Pass	18A01	5350	4/1	23	6.0	12.2	15.5
OKANOGAN RIVER							
Aberdeen Lake	6A-Can	4300	3/31	22	5.1	6.0	6.2*
Blackwall Mountain	100-Can	6250	3/30	68	19.4	47.8	36.1*
Bouleau Creek	31-Can	5000	4/1	22	5.9	12.2	12.4*
Bouleau Lake	234-Can	4580	4/1	38	7.9	20.0	18.3*
Brenda Mine	193-Can	4800	3/15	30	7.3	-	-
			3/30	31	7.5	16.8	15.4*
Brookmere	27-Can	3200	3/31	18	5.0	7.4	9.9*
Carrs Landing Upper	168-Can	3200	3/28	8.3	2.8	5.3	3.8*
Clark +	19A08a	7000	4/1	Not Measured		-	23.3

\# Average based on 1958-72 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation.

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1977 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
OKANOGAN RIVER (Cont.)							
Enderby	130-Can	6250	3/28	94	29.5	44.4	40.6*
Esperon Creek Lower	164-Can	4400	3/27	23	4.6	12.5	14.1*
Esperon Creek Middle	163-Can	4700	3/27	30	8.8	17.1	17.6*
Esperon Creek Upper	162-Can	5400	3/27	42	10.7	18.7	22.1*
Freezeout Meadows New	20A38	5000	3/28	63	16.0	41.7	29.9
Graystoke Lake	5-Can	5950	3/29	43	11.4	19.8	24.5*
Hamilton Hill	107-Can	4900	3/29	40	9.7	20.8	16.2*
Harts Pass	20A05A	6500	3/27	79	22.0	63.0	47.2
Horseshoe Basin +	19A05a	7000	3/29	42	11.8	18.6	13.5
Isintok Lake	152-Can	5510	3/27	19	3.5	9.6	9.0*
Lost Horse Mountain	105-Can	6300	3/31	31	6.5	10.0	9.8*
Loup Loup	19A07	4650	3/30	5.4	1.6	7.1	9.3
McCulloch	4-Can	4200	3/15	22	4.0	-	-
			3/30	25	5.2	8.8	6.8*
Missezula Mountain	106-Can	5100	3/28	24	5.5	11.1	9.2*
Mission Creek	5A-Can	6000	3/29	62	16.8	23.2	20.5*
Monashee Pass	48A-Can	4500	3/25	45	12.4	16.2	14.2*
Mount Kobau	156-Can	5950	3/30	23	5.6	10.8	14.7*
Muckamuck +	19A09a	6390	3/29	20	6.2	16.2	17.8
Mutton Creek No. 1	19A01	5700	3/30	15	4.7	10.1	14.2
Mutton Creek No. 2	19A04	6000	3/30	20	5.3	11.1	15.4
Mutton Creek No. 2 SP	19A11SP	6000	3/30	-	2.8	8.4	New
New Copper Mountain	46A-Can	4300	3/15	8	1.5	-	-
			3/30	9.8	2.3	6.0	5.5*
New Penticton Res. #2	183-Can	5225	4/1	26	5.7	9.8	9.7*
Nickel Plate Mtn.	47-Can	6200	3/29	30	7.0	11.3	8.2*
Oyama Lake	203-Can	4400	3/27	22	5.5	-	8.3*
Paysayten +	20A28a	4300	3/29	38	10.6	18.0	16.0
Postill Lake	55-Can	4500	3/31	33	8.1	11.1	9.3*
Quartette Lake	34-Can	4000	3/30	26	5.5	19.0	15.0*
Rusty Creek	19A03	4000	3/29	2.5	0.6	4.2	7.0
Salmon Meadows	19A02	4500	3/30	9	3.1	7.7	10.3
Silver Star Mountain	99-Can	6050	3/28	64	19.2	38.0	29.3*
Starvation Mtn. +	19A10a	6750	3/29	27	8.4	20.4	21.9
Summerland Reservoir	3A-Can	4200	3/26	22	4.8	12.0	9.5*
Touts Coulee	19A06	2845	3/29	1.8	0.5	1.4	1.1
Trout Creek	3-Can	4700	3/27	20	4.2	10.6	7.7*
Vaseux Creek	233-Can	4600	4/1	24	5.0	5.9	8.0*
White Rocks Mountain	70-Can	6000	3/30	39	12.4	23.7	24.4*
METHOW RIVER							
Billy Goat Pass +	20A10a	6400	4/1	Not Measured		33.0	32.0
Dollar Watch +	20A29a	7000	4/1	Not Measured		28.8	29.3
Harts Pass	20A05A	6500	3/27	79	22.0	63.0	47.2

Average based on 1958-72 average
* Average for years of record
+ Snow water equivalent estimated from aerial stadia observation

USDA SCS PORTLAND OREGON 1973

SNOW DATA TO APRIL 1, 1977 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average #
METHOW RIVER (Cont.)							
Horseshoe Basin +	19A05a	7000	3/29	42	11.8	18.6	13.5
Loup Loup	19A07	4650	3/30	5.4	1.6	7.1	9.3
Mutton Creek No. 1	19A01	5700	3/30	15	4.7	10.1	14.2
Mutton Creek No. 2	19A04	6000	3/30	20	5.3	11.1	15.4
Mutton Creek No. 2 SP	19A11SP	6000	3/30	-	2.8	8.4	New
Rusty Creek	19A03	4000	3/29	2.5	0.6	4.2	7.0
Salmon Meadows	19A02	4500	3/30	9	3.1	7.7	10.3
CHELAN LAKE BASIN							
Cloudy Pass +	20A22a	6500	3/29	76	22.8	72.8	54.0
Greenwood Flat +	20A25a	3540	4/1	Not Measured		30.8	24.8
Little Meadows +	20A24a	5275	4/1	Not Measured		71.2	45.8
Lyman Lake	20A23A	5900	3/29	102	28.3	94.8	61.5
Park Creek Flat +	20A13a	2220	4/1	Not Measured		-	34.3
Park Creek Ridge	20A12A	4600	3/29	61	19.1	56.4	46.1
Petersons +	20A16a	3730	4/1	Not Measured		-	32.2
Rainy Pass	20A09	4780	3/27	83	22.8	54.2	41.6
Safety Harbor	20A30A	6300	4/1	Not Measured		35.7	29.9
War Creek Pass +	20A31a	6500	4/1	Not Measured		-	43.5
ENTIAT RIVER							
Blue Creek G. S.	20B23a	5425	3/29	72	23.0	60.8	New
Brief	20B19	1600	4/1	0	0.0	8.6	4.0
Entiat Meadows +	20A33a	4540	3/29	60	19.2	56.9	48.1
Entiat River Trail +	20A34a	3325	3/29	22	8.6	20.1	21.3
Four Mile Ridge +	20B27a	6800	3/29	48	15.4	43.3	New
Fox Camp +	20A36a	6510	3/29	86	27.5	76.8	59.0
Pope Ridge	20B20	3540	3/30	10	4.1	20.8	16.9
Pugh Ridge +	20A32a	6725	3/29	49	15.7	47.2	39.6
Shady Pass	20A37	6200	3/30	33	10.3	41.6	New
Snow Brushy +	20A35a	3910	3/29	53	20.7	41.4	40.9
Tommy Creek +	20B21a	4900	3/29	22	7.0	35.9	27.1
WENATCHEE RIVER							
Berne-Mill Creek	21B23	2925	3/15	34	9.1	30.8	-
			3/29	42	12.0	35.5	27.6
Berne-Mill Creek New	21B41SP	3240	3/29	37	10.2	29.8	23.3
Blewett Pass No. 2	20B02	4270	3/25	13	4.4	18.6	16.5
Chiwaukum G. S.	20B16	1810	3/15	6.8	2.8	13.6	-
			3/29	0	0.0	11.8	10.5

\# Average based on 1958-72 average.

\+ Snow water equivalent estimated from aerial stadia observation.

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SNOW DATA TO APRIL 1, 1977 - APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average #
WENATCHEE RIVER (cont.)							
Fish Lake	21B04	3371	3/28	50	15.1	35.5	35.1
Lake Wenatchee	20B05	1970	3/15	12	4.6	18.9	-
			3/29	11	4.4	20.3	11.9
Leavenworth R. S.	20B17	1127	4/1	0	0.0	0.0	0.7
Lyman Lake	20A23A	5900	3/29	102	28.3	94.8	61.5
Merritt	20B18	2140	3/15	12	4.7	18.0	-
			3/29	13	2.9	19.4	14.9
Stevens Pass	21B01	4070	3/15	71	19.1	57.3	50.8
			3/29	87	25.9	63.8	53.7
Stevens Pass Sand Shed	21B45	3700	3/15	45	10.3	39.3	-
			3/29	56	15.4	46.7	-
SQUILCHUCK CREEK							
Beehive Springs	20B03	4400	3/31	4.2	1.4	5.1	7.8
Scout-A-Vista	20B04	3400	3/31	1.2	0.3	6.8	6.9
STEMILT CREEK							
Jump-Off	20B08	4450	3/31	4.8	1.6	7.6	8.0
Stemilt Slide	20B06	5000	3/30	8.1	2.7	14.3	15.5
Upper Wheeler	20B07	4400	3/30	2.7	1.1	6.9	9.0
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	3/30	9.6	3.4	7.8	-
Colockum Creek Lower	20B23	4300	3/30	3.8	1.2	7.8	-
Trough # 2	20B25SP	5310	3/30	7.8	3.2	8.7	New
YAKIMA RIVER							
Ahtanum R. S.	21C11	3100	3/28	0	0.0	5.6	5.2
Big Boulder Creek	21B09	3200	3/28	27	7.3	25.7	18.0
Blewett Pass No. 2	20B02	4270	3/25	13	4.4	18.6	16.5
Bumping Lake	21C08	3450	3/14	14	2.9	16.5	16.9
			3/31	10	3.1	18.9	16.2
Bumping Lake New	21C36	3400	3/14	16	3.3	22.1	21.4
			3/31	13	4.4	24.1	20.7
Cayuse Pass	21C06	5300	3/29	114	38.1	101.9	90.2
Colockum Pass	20B09	5370	3/31	11	3.8	13.6	17.4
Cooke Creek	20B10	4123	3/31	0	0.0	3.6	5.1
Corral Pass	21B13	6000	3/29	69	16.6	-	41.6

Average based on 1958-72 average

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SNOW DATA TO APRIL 1, 1977 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	Average #
YAKIMA RIVER (Cont.)							
Fish Lake	21B04	3371	3/28	50	15.1	35.5	35.1
Green Lake	21C10	6000	3/28	39	12.0	32.3	36.2
Grouse Camp	20B11	5385	3/14	13	3.3	-	-
			3/30	15	4.9	17.6	17.1
High Creek	20B12	2930	3/30	0	0 0	7.3	2.3
Joe Lake	21B46a	4624	3/29	141	40.9	-	-
Lake Cle Elum	21B14M	2200	3/13	0	0.0	13.4	7.8
			3/30	0	0.0	14.6	4.5
Lemah Creek +	21B47a	3327	3/29	78	21.1	50.4	-
Manashtash	20C01	3935	3/31	0	0.0	3.9	2.2
Morse Lake	21C17	5400	3/30	72	19.9	57.6	61.9
Nanum	20B13	3875	3/30	0	0.0	10.3	8.2
Olallie Meadows	21B02	3625	3/30	69	22.6	57.8	48.8
Satus Pass	20D01	4030	4/1	0	0.0	10.4	8.6
Stampede Pass SP	21B10	3860	3/15	-	9.0	41.2	41.2
			3/31	-	1414	49.2	43.4
Trail Creek	20B14	3360	3/30	0	0.0	0.0	0.1
Tunnel Avenue	21B08	2450	3/14	27	5.4	25.2	24.0
			3/31	20	7.5	32.4	24.1
Van Epps Pass +	20B26a	5925	3/29	98	28.4	47.6	-
Walters Flat	20B15	3360	3/30	0	0.0	7.4	5.3
Waptus Lake +	21B49a	3024	3/29	81	21.9	47.2	-
White Pass (E. Side)	21C28	4500	3/16	26	4.2	24.1	24.7
			3/30	30	7.4	28.4	25.9
AHTANUM CREEK							
Ahtanum R. S.	21C11	3100	3/28	0	0.0	5.6	5.2
Green Lake	21C10	6000	3/28	39	12.0	32.3	36.2
LOWER COLUMBIA DRAINAGE							
ASOTIN CREEK							
Spruce Springs	17C04	5700	3/28	39	10.4	29.1	26.6
MILL CREEK							
Homestead	17C01	4030	3/30	12	4.8	12.3	7.3
Martin Springs	17C02	4400	3/30	20	7.3	20.5	14.2
Tollgate	18D3M	5070	3/30	46	13.1	36.8	25.1
KLICKITAT RIVER							
Satus Pass	20D01	4030	4/1	0	0.0	10.4	8.6

\+ Snow water equivalent estimated from aerial stadia observation.
\# Average based on 1958-72 average.

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SNOW DATA TO APRIL 1, 1977 - APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
WHITE SALMON RIVER							
Cultus Creek	21C12	4000	3/29	69	21.8	54.9	49.4
Surprise Lakes	21C13A	4250	3/29	61	19.3	56.5	53.9
WIND RIVER							
Old Man Pass	21D19	3100	3/29	30	9.6	27.3	19.7
LEWIS RIVER							
Blue Lake +	21C22a	4800	3/29	130	41.6	95.8	84.8
Bob's Trail	21C21	2200	3/29	22	6.8	24.5	15.1
Calamity Ridge +	22D01a	2500	3/29	23	7.1	12.2	5.6
Council Pass +	21C18a	4200	3/29	72	23.0	54.7	42.9
Cultus Creek	21C12	4000	3/29	69	21.8	54.9	49.4
Divide Meadow +	21C29a	5600	3/29	84	27.7	65.2	60.6
Grand Meadow	21C25	3500	3/29	33	10.1	33.5	27.7
Lone Pine Shelter	21C26	3800	3/29	69	18.9	55.1	43.3
Marble Mountain +	22C05a	3200	3/29	51	17.3	54.4	38.2
New Muddy River	22C06	2000	3/29	9.7	3.0	15.7	9.5
Old Man Pass	21D19	3100	3/29	30	9.6	27.3	19.7
Plains of Abraham +	21C01a	4400	3/29	100	33.0	65.5	71.8
Smith Creek Road	22C04	2100	3/29	2.6	0.8	18.7	17.7
Spencer Meadow +	21C20a	3400	3/29	48	14.9	38.2	25.7
Surprise Lakes	21C13A	4250	3/29	61	19.3	56.5	53.9
Table Mountain +	21C24a	4200	3/29	82	26.2	57.6	48.8
Timbered Peak +	21D18a	3000	3/29	48	14.9	30.6	17.8
COWLITZ RIVER							
Cayuse Pass	21C06	5300	3/29	114	38.1	101.9	90.2
Plains of Abraham +	22C01a	4400	3/29	100	33.0	65.5	71.8
White Pass (E. Side)	21C28	4500	3/16	26	4.2	24.1	24.7
			3/30	30	7.4	28.4	25.9
WHITE RIVER							
Cayuse Pass	21C06	5300	3/29	114	38.1	101.9	90.2
Corral Pass	21B13	6000	3/29	69	16.6	-	41.6
Morse Lake	21C17	5400	3/30	72	19.9	57.6	61.9

\# Average based on 1958-72 average

\+ Snow water equivalent estimated from aerial stadia observation.

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SNOW DATA TO APRIL 1, 1977 - APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
						Water Content (inches)	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average #
GREEN RIVER							
Airstrip	21B24	1800	3/29	0	0.0	5.6	1.3
Charley Creek	21B25	1200	3/29	0	0.0	0.0	0.0
Cougar Mountain SP	21B42SP	3200	3/30	29	10.4	-	-
Grass Mtn. No. 2	21B27	2900	3/29	25	8.8	15.8	24.4
Grass Mtn. No. 3	21B28	2100	3/29	7.2	2.2	5.0	4.4
Lester Creek	21B29	3100	3/29	37	12.8	31.4	27.0
Lynn Lake	21B50	4000	3/29	57	21.8	26.0	-
Sawmill Ridge	21B31	4700	3/29	57	17.1	50.2	41.5
Snowshoe Butte SP	21B43SP	5000	3/30	84	24.2	-	-
Stampede Pass SP	21B10	3860	3/15	-	9.0	41.2	41.2
			3/31	-	14.4	49.2	43.4
Twin Camp	21B30	4100	3/29	43	11.8	30.2	25.9
CEDAR RIVER							
City Cabin	21B03	2390	3/28	30	7.8	24.8	15.5
Mt. Gardner	21B21	3300	3/29	26	10.2	22.8	18.0
Mt. Lindsay	21B16	2500	3/29	22	6.6	16.8	15.9
Mt. Washington	21B15	3000	3/29	19	6.8	13.8	7.5
Rex River	21B17	2400	3/29	28	9.4	29.4	13.5
S. F. Cedar	21B06	3000	3/28	30	8.1	25.8	20.6
Tinkham Creek	21B20	3400	3/28	42	11.2	31.6	23.7
SNOQUALMIE RIVER							
Alpine Meadow	21B48	3500	3/31	66	24.1	69.1	-
Lake Elizabeth	21B19	2900	3/30	66	23.2	55.6	48.5
Olallie Meadows	21B02	3625	3/30	69	22.6	57.8	48.8
S. F. Tolt	21B18	1900	3/31	0	0.0	6.4	0.8
SKYKOMISH RIVER							
Lake Elizabeth	21B19	2900	3/30	66	23.2	55.6	48.5
Stevens Pass	21B01	4070	3/15	71	19.1	57.3	50.8
			3/29	87	25.9	63.8	53.7
Stevens Pass S. Shed	21B45	3700	3/15	45	10.3	39.3	-
			3/29	56	15.4	46.7	-

Average based on 1958-72 Average.

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SNOW DATA TO APRIL 1, 1977 - APPENDIX 9

SNOW

DRAINAGE BASIN and/or SNOW COURSE NAME	Number	Elevation	THIS YEAR: Date of Survey	Snow Depth (Inches)	Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	Average#
SKAGIT RIVER							
Beaver Creek Trail	21A04	2200	3/27	10	3.6	25.5	12.6
Beaver Pass	21A01	3680	3/27	35	9.9	43.9	33.7
Brown Top	21A28a	6000	3/27	105	30.4	95.0	-
Cloudy Pass	20A22a	6500	3/29	76	22.8	72.8	54.0
Devils Park	20A04A	5900	3/27	79	21.7	65.8	45.6
Freezeout Cr. Trail	20A01	3500	3/28	19	4.8	17.6	12.5
Freezeout Meadows New	20A38	5000	3/28	63	16.0	41.7	29.9
Granite Creek	21A29	3500	3/27	39	9.8	27.4	-
Harts Pass	20A05A	6500	3/27	79	22.0	63.0	47.2
Klesilkwa	35B-Can	3700	3/29	26	7.4	30.6	15.7*
Lyman Lake +	20A23A	5900	3/29	102	28.3	94.8	61.5
Meadow Cabins	20A08	1900	3/27	6.6	1.1	12.8	6.0
New Hozomeen Lake	21A30	2800	3/28	16	4.1	18.3	-
New Tashme	26A-Can	2500	3/29	17	4.8	18.6	11.2*
Quartette Lake	34-Can	4000	3/30	26	5.5	19.0	15.0*
Rainy Pass	20A09	4780	3/27	83	22.8	54.2	41.6
Thunder Basin	20A07	4200	3/27	48	11.5	24.9	23.9
BAKER RIVER							
Baker Pass +	21A27a	4900	3/5	84	29.0	93.0	-
			3/28	147	46.5	115.9	-
Dock Butte	21A11A	3800	3/5	45	16.0	78.0	61.3
			3/28	110	34.2	96.6	71.3
Easy Pass	21A07A	5200	3/5	48	17.0	79.0	72.0
			3/29	127	39.2	121.8	87.0
Jasper Pass	21A06A	5400	3/5	73	26.0	106.0	82.8
			3/29	152	47.8	122.8	93.6
Komo Kulshan	21A17	800	3/28	0	0.0	10.1	6.0
Marten Lake	21A09A	3600	3/5	54	19.0	92.0	67.6
			3/29	134	43.8	108.7	78.1
Mount Blum +	21A18a	5800	3/5	57	20.0	65.0	58.2
			3/28	111	35.1	85.7	-
Panorama New	21A26	4300	3/13	105	29.6	76.8	-
			4/1	111	37.3	86.9	-
Rocky Creek	21A12A	2100	3/5	14	5.0	48.0	25.4
			3/28	47	15.6	49.4	29.2
Schreibers Meadow	21A10A	3400	3/5	28	10.0	64.0	53.8
			3/28	105	33.1	85.8	65.6
S. F. Thunder Creek	21A14A	2200	3/28	8.7	3.1	18.4	5.3
Sulphur Creek	21A13	1600	3/28	12	4.7	28.1	13.6
Three Mile Creek	21A15	1600	3/28	0	0.0	2.9	1.7
Watson Lakes	21A08A	4500	3/28	105	34.0	83.4	71.2

\# Average based on 1958-72 average
* Average for years of record
\+ Snow water equivalent estimated from aerial stadia observation.

USDA-SCS-PORTLAND OREGON 1973.

SNOW DATA TO APRIL 1, 1977 - APPENDIX 10

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches) Last Year	Water Content (inches) Average #
NOOKSACK RIVER							
Bald Mountain +	21A19a	4400	3/30	96	29.8	73.0	51.0
Canyon +	21A20a	5100	3/30	146	45.3	104.1	60.0
Glacier Creek	21A23	3700	4/1	51	17.6	-	23.4
Panorama New	21A26	4300	3/13	105	29.6	76.8	-
			4/1	111	37.3	86.9	-
Twin Lakes +	21A21a	5200	3/30	146	45.3	115.9	79.1
OLYMPIC PENINSULA							
DUNGENESS RIVER							
Deer Park	23B04	5200	3/28	41	12.6	-	24.1
MORSE CREEK							
Cox Valley	23B14	4500	3/30	69	22.2	57.2	-
ELWHA RIVER							
Hurricane	23B03	4500	3/27	53	14.1	33.3	26.1

USDA SCS PORTLAND OREGON 1973

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests and Water Resources,
Water Resources Service, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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